

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/579,429 Confirmation No. 7880
Applicant (s) : Wenbin Liang, et al.
Filed : May 15, 2006
TC/A.U. : 1794
Examiner : Sheeba Ahmed
Title : FILMS WITH SUPERIOR IMPACT RESISTANCE AND
IMPROVED CATASTROPHIC FAILURE RESISTANCE UNDER
HIGH STRAIN RATE

Docket No. : 63385B
Customer No. : 00109

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE

Responsive to the Official Action dated November 28, 2008, please
reconsider the claims in view of the arguments presented hereinafter.

The claims are re-presented in double space format per the Examiner's request. No
amendments are contained therein. The listing of claims begins on page 2 of this
paper.

Remarks/Arguments begin on page 7 of this paper.

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A stretch film having three or more layers wherein:
 - A) at least one layer comprises a polyethylene characterized as having:
 - i) a density from about 0.9 g/cc to about 0.96 g/cc;
 - ii) a melt index from about 0.5 g/10 minutes to about 10 g/10 minutes,
measured in accordance with ASTM D 1238, condition 190°/2.16 kg; and
 - iii) a molecular weight distribution from about 2.5 to about 4.5; and
 - B) wherein at least one non-surface layer comprises at least one propylene polymer;
and
 - C) wherein the stretch film is characterized as having an ultimate stretch of at least 200% , a Dart A of at least 430 gms/mil and a CF of 5% or less.
 2. (Cancelled)
 3. (Original) The stretch film of Claim 1 wherein the film comprises at least 50 % by weight polyethylene.
 4. (Original) The stretch film of Claim 1 wherein the film is in the range of 0.4 to 3 mil in thickness.
 5. (Original) The stretch film of Claim 4 wherein the film is in the range of 0.7 mils to 3 mils.
 6. (Original) The stretch film of Claim 1 having a Dart A greater than 570 gms/mil.

7. (Original) The stretch film of Claim 1 having a Dart A greater than 700 gms/mil.
8. (Original) The stretch film of Claim 1 having a CF of 3% or less.
9. (Original) The stretch film of Claim 1 having an ultimate stretch of at least 300%.
10. (Cancelled)
11. (Cancelled)
12. (Original) The stretch film of Claim 1 comprising a homogeneous polymer component.
13. (Original) The stretch film of claim 1 wherein the film is made at an output rate of at least about 6 pounds/hour/inch of die width.
14. (Currently Amended) ~~A~~ The stretch film of claim 1 ~~comprising at least one layer comprising an ethylene polymer~~, wherein the film has a tensile stress at break of at least 5000 psi ~~and an ultimate stretch of at least 200%, and a CF of 5% or less.~~
15. (Original) The stretch film of Claim 14 further characterized as having a Dart A of at least 430 gms/mil
16. (Cancelled)
17. (Cancelled)
18. (Original) A stretch film having an ultimate stretch of at least 200% , a Dart A of at least 430 gms/mil and a CF of 5% or less, and comprising at least three layers, wherein a non-skin layer comprises a propylene polymer, and at least one other layer comprises an ethylene polymer composition, wherein the ethylene polymer composition comprises:

(A) from about 10 percent (by weight of the total composition) to about 95 percent (by weight of the total composition) of at least one ethylene interpolymer having:

- (i) a density from about 0.89 g/cm³ to about 0.935 g/cm³,
- (ii) a melt index (I₂) from about 0.001 g/10 minutes to about 10 g/10 minutes, preferably from about 0.001 g/10 minutes to about 1 g/10 minutes, more preferably from about 0.001 g/10 minutes to about 0.5 g/10 minutes,
- (iii) a slope of strain hardening coefficient greater than or equal to 1.3, and

(iv) a Composition Distribution Index (CDBI) greater than 50 percent; and

(B) from about 5 percent (by weight of the total composition) to about 90 percent (by weight of the total composition) of at least one ethylene polymer having a density from about 0.93 g/cm³ to about 0.965 g/cm³ and a linear polymer fraction, as determined using temperature rising elution fractionation (TREF).

19. (Original) A stretch film having an ultimate stretch of at least 200% , a Dart A of at least 430 gms/mil and a CF of 5% or less, and comprising at least three layers, wherein a non-skin layer comprises a propylene polymer, and at least one other layer comprises an ethylene polymer composition, wherein the ethylene polymer composition comprises:

(A) from about 10 percent (by weight of the total composition) to about 100 percent (by weight of the total composition) of at least one ethylene interpolymer having:

- (i) a density from about 0.89 g/cm³ to about 0.935 g/cm³,

(ii) a melt index (I_2) from about 0.001 g/10 minutes to about 10 g/10 minutes,

(iii) a molecular weight distribution, M_w/M_n , from about 2 to about 4, and

(iv) a Composition Distribution Index (CDBI) greater than 50 percent; and

(B) optionally, from about 5 percent or less (by weight of the total composition) to about 90 percent (by weight of the total composition) of at least one ethylene polymer having a density from about 0.93 g/cm³ to about 0.965 g/cm³ and a linear polymer fraction, as determined using temperature rising elution fractionation (TREF).

20. (Original) The stretch film of claim 19 wherein (A) has a melt index from about 0.001 g/10 minutes to about 1 g/10 minutes.

21. (Original) The stretch film of claim 19 wherein (A) has a melt index from about 0.001 g/10 minutes to about 0.5 g/10 minutes.

22. (Original) A stretch film having an ultimate stretch of at least 200% , a Dart A of at least 430 gms/mil and a CF of 5% or less, and comprising at least three layers, wherein a non-skin layer comprises a propylene polymer, and at least one other layer comprises an ethylene polymer composition, wherein the composition comprises:

(A) an interpolymer having a narrow molecular weight distribution and a narrow composition distribution breadth index (CDBI), defined as the weight percent of the polymer molecules having a comonomer content within 50 percent of the median total molar comonomer content, which is greater than about 50 percent and a degree of branching less than or equal to 2 methyls/1000 carbons of about 15 percent

(by weight) or less and having an aluminum residue content of less than or equal to about 250 ppm present in the interpolymer composition, said interpolymer A being present in an amount of from about 15 to about 85% by weight based on the combined weight of Components A and B; and

(B) an interpolymer having a broad molecular weight distribution and a broad composition distribution and a degree of branching less than or equal to 2 methyls/1000 carbons of about 10 percent (by weight) or more and a degree of branching greater than or equal to 25 methyls/1000 carbons of from about 25 percent (by weight) or less present in the interpolymer composition, said interpolymer B being present in an amount of from about 15 to about 85% by weight based on the combined weight of Components A and B.

23. (Original) The film of any of claims 18-22, wherein the ethylene polymer composition comprises a skin layer.

REMARKS/ARGUMENTS

It appears from PAIR that amendments and remarks made in the PCT phase of this application were not entered, and so they are being included as attachments along with this response. To the extent that they need to be re-submitted in order to be considered, please consider this a request to amend this case as instructed in these documents.

The above re-listing of the claims is provided at the Examiner's request, so that the claims would be double spaced. As indicated above, the claims are as they appear after making amendments under Article 34 of the PCT.

With these amendments, it is believed the art cited by the Examiner (US5,907,943 to Eichbauer) is no longer relevant, as, for example, this reference does not contain any teaching of a propylene polymer as required in the amended claims. Accordingly, a notice of allowance of the amended claims is courteously requested.

Respectfully submitted,

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